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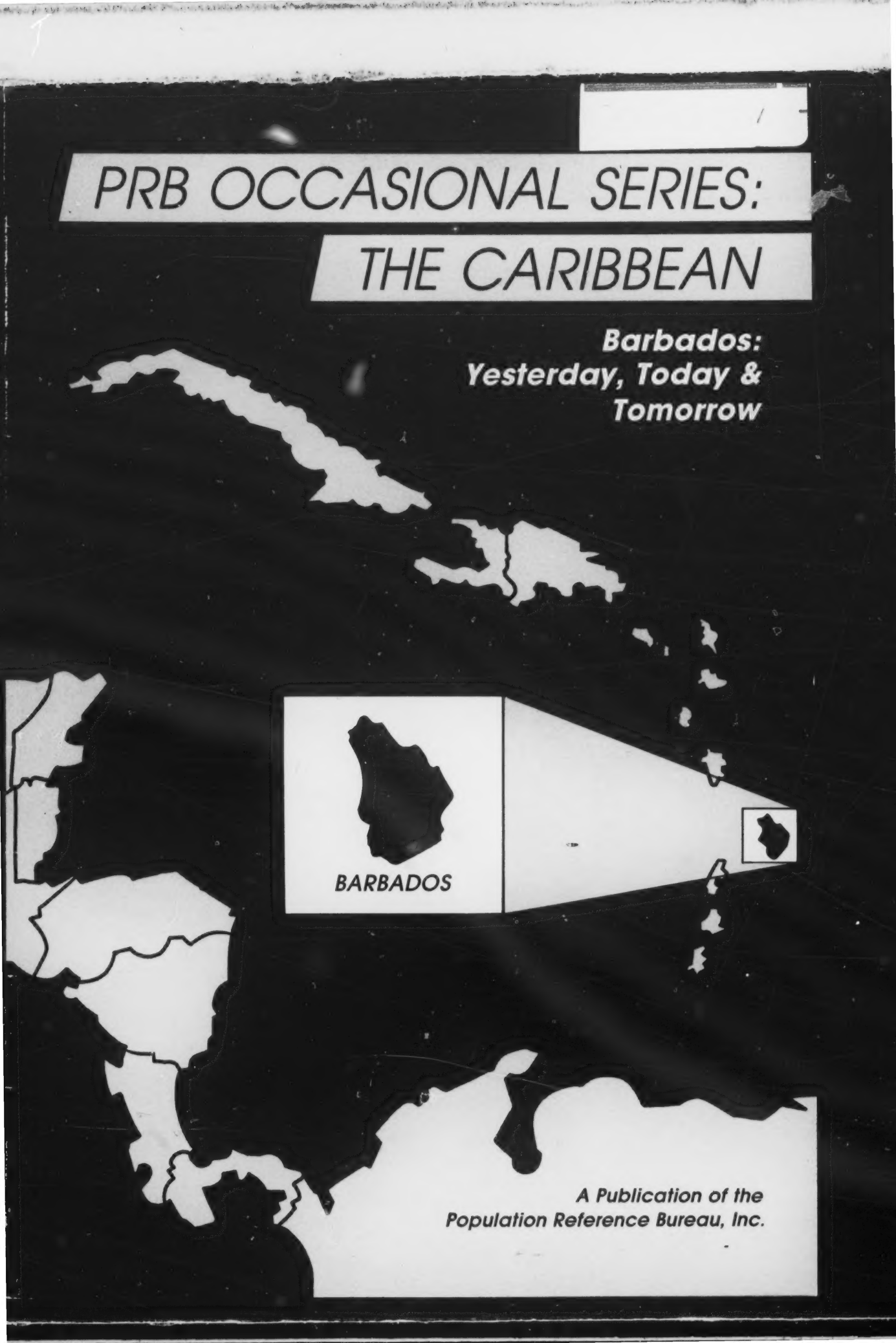
Barbados: Yesterday, Today & Tomorrow



A Publication of the Population Reference Bureau, Inc.

Barbados: Yesterday, Today & Tomorrow

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December 1983

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This report is supported by the U.S. Agency for International Development, Grant No. 538-0000-S-00-3028.

Barbados: Yesterday, Today & Tomorrow

Barbados Yesterday

The demographic history of Barbados has been characterised by high population density and significant migration from the island.

The first modern census, in 1844, reported a population of 122,198 (see Appendix Table A), which meant there were 736 persons per square mile. By 1946, there were 193,680 Barbadians (1,160 per square mile). This slow rate of growth (0.46 percent annually) was due to emigration to other British West Indian territories—especially the larger, less densely populated countries of Guyana and Trinidad—and, from the end of the nineteenth century, to countries outside the region. Indeed, net emigration between the censuses of 1891 and 1921 exceeded the balance between births and deaths (the country's natural increase) by 54 percent and was responsible for a decline in population from 182,867 to 156,774.

From 1921 to 1946, a significant decline in mortality occurred. Infant deaths per 1,000 live births (the infant mortality rate) declined from 283 to 157 and the average length of life increased from 30 to 50 years. Furthermore, the completion of the Panama Canal and the passing of U.S. quota laws in 1921 and 1924 effectively closed two very important outlets for Barbadians and caused a dramatic decline in emigration, down to 6.5 percent of the natural increase. The result was a resurgence of growth and by 1942 the population regained its 1891 level.

The census of 1960 counted 232,820 persons. From 1946 to then, therefore, annual growth averaged 2,800 people—a rate of 1.34 percent. Mortality continued to decline rapidly during these years: The average length of life increased from 50 to 65 years while the infant mortality rate dropped from 157 to 70 (see Appendix Table B). At the same time there was a slight decrease in fertility. The average number of live births per 1,000 population (the crude birth rate) was 33.5 in 1946 and 31.9 in 1960.

The rate at which the population grew would have been faster had it not been for the start of another stream of migrants, this time to the United Kingdom. Net emigration amounted to an annual average of 1,350 persons, 32.5 percent of the natural increase between 1946 and 1960. For the second successive intercensal period, the principal determinant of population growth was the fall in mortality.

Population growth slowed appreciably between 1960 and 1970. The 1970 census enumerated 235,229 persons, representing an annual average intercensal increase of 540 persons, only one-fifth as many as the previous period. One reason for this reduced rate of growth was the continued high level of emigration. The movement of Barbadians to the United Kingdom, which had started in the early 1950s and increased rapidly that decade, reached a peak. This emigration slowed as a result of a number of restrictive measures by the United Kingdom in the 1960s—particularly the Commonwealth Immigrants Act of 1962. Around the same time, howver, entry requirements to Canada and the United States eased somewhat and so emigration continued, albeit to different destinations.

Although the dampening effect of emigration on population growth during this period is clear, the decline in fertility also made a significant contribution. From the turn of the century, Barbados experienced, in the context of the Caribbean, consistently low levels of fertility with little variation until 1960. By 1970, however, the total fertility rate (TFR)—the number of children born during a woman's reproductive years—fell to 3.0 from a figure of 4.7 in 1960.

It is interesting to note that a Government-appointed Joint Committee of the Legislature, in a 1954 report, strongly recommended the institution of a "system of family planning under the aegis of the Government." The Barbados Family Planning Association was set up the following year, and received government financial support in 1956. Its existence undoubtedly played a significant role in subsequent fertility declines, which brought birth rates down to levels comparable to those in Europe and North America.

Barbados Today

A total of 244,228 persons were enumerated in the 1980 census of Barbados. This represented an increase of 8,999 (3.8 percent) over the population in 1970, which yields a low average annual rate of growth during the decade of .37 percent.

Differences between births and deaths (that is, natural increase) and between immigration and emigration (net migration) account for all changes in population size. As in earlier decades, population growth in Barbados during the 1970s was due to the excess of natural increase over net emigration: There were about 27,000 more births than deaths, while net emigration was estimated to be about 18,000.

Fertility declines since 1970 have been dramatic. The total fertility rate fell to 1.9 in 1980. Among all independent developing countries, only Barbados and Cuba have fertility rates below the level needed to replace the population in the long run, assuming net migrations of zero.

Mortality rates fell slightly during the decade and by 1980 the crude death rate was 8 per 1,000 population. Life expectancy at birth rose from 68 in 1970 to about 70 in 1980—a level comparable to most developed countries in the world. Similarly, infant mortality fell from 46 in 1970 to 23 in 1980. Among developing countries, Barbados ranks near the top in all indices of success in reducing mortality.

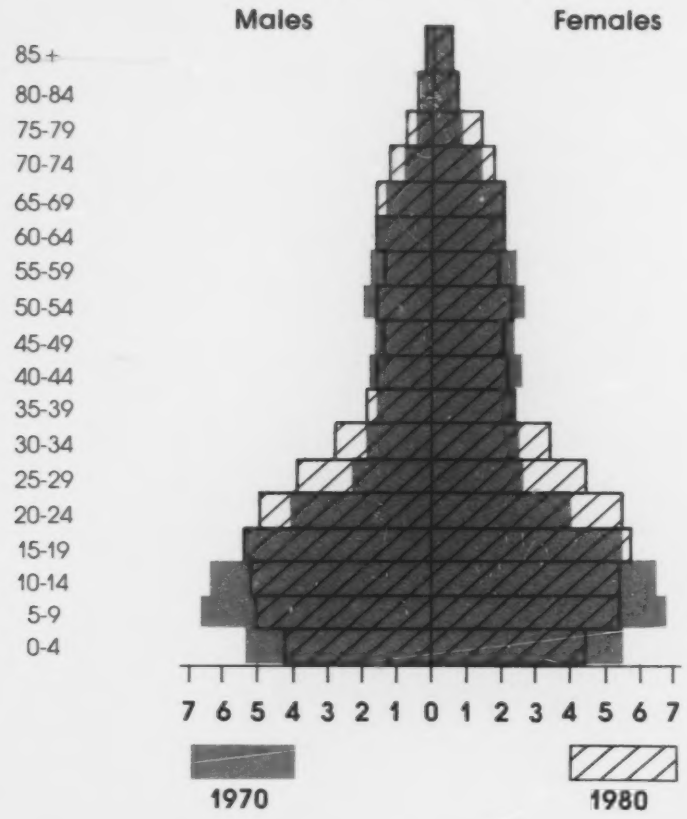
As in most countries, arriving at reasonable estimates of net international migration is particularly difficult. For this report the reverse projection method has been used to arrive at an estimate of the net migration by age and sex for 1970–79.* Based on this approach, about 18,000 more people left the country than entered it. According to U.S. and Canadian immigration data, 18,281 Barbadians entered the United States during the decade (see Table 1) and 5,873 entered Canada. The net emigration of 18,000 translates into a rate of 7.5 persons per 1,000. Although this is high by international standards, it is nevertheless considerably lower than that noted for earlier decades. Indeed, it has been estimated that if there had been no emigration since 1950, the 1980 population of Barbados would approach 370,000 rather than 244,000.

Table 1: Permanent Barbados-Born Immigrants Admitted to the United States, 1955–80

Year	Number
1955–59	1,274
1960–64	1,970
1965–69	5,944
1970–74	8,034
1975	1,618
1976	1,743
1977	2,763
1978	2,969
1979	2,461
1980	2,667

*The reverse projection method "survives" the population by age and sex backward in five-year intervals. By using appropriate survival rates, a population—males aged 45–49 in 1980, for example—can be restored to the number who would have been 40–44 in 1975 and 35–39 in 1970. Assuming relatively complete censuses in both 1970 and 1980, any differences in the age-sex distribution in 1970 between the restored and the actual enumerated populations must be accounted for by either immigration or emigration. This yields only a rough estimate of the level of net migraiton over a decade; nonetheless it is the best available, short of actual data on migration itself.

Figure 1: Age-Sex Distribution of Barbados, 1970 and 1980



Significant changes in fertility and migration and the improvement in mortality during the 1970s contributed not only to a small increase in numbers but also to a variation in the age distribution of the population, as noted in Figure 1. Overall, the population aged slightly—the median age rising from 21.2 in 1970 to 24.5 in 1980. The percent under 5 fell from 10.9 to 8.6, while that of people 65 or older grew from 8.3 to 10.5. The so-called active population (15–64) increased from 54.6 to 59.9 percent. The number of active people per 100 dependent persons (those under 15 and those 65 or older) changed from 82.9 to 78.6. Thus fewer working-age people were needed to support the dependents—in part because of declining fertility.

Changes in age distribution and dependency ratios are important; numerical changes are perhaps even more significant for policymaking. The rapid decline in fertility during the 1970s meant the number of school-age children (5–14) fell by 10,000—from 61,450 to 50,917. On the other hand, the elderly population, 65 or older, grew by over 6,000—from 19,489 to 25,501. This is typical of societies experiencing declines in fertility and improvements in longevity—the number of children falls while that of the elderly grows.

The future of Barbados, demographically speaking, is one of eventual population stabilization, given the current levels of fertility and net migration. Nevertheless, its age composition suggests that the built-

in momentum for growth will result in increasing numbers for at least the immediate future.

Barbados Tomorrow

In developing population projections for the next 50 years, the selection of appropriate assumptions about demographic behaviour is critical. Furthermore, population projections should not be confused with population predictions. This report does not attempt to predict the number and age distribution of Barbadians in any future year. Rather, it indicates what the size and the composition of the population would be under specific assumptions about future levels of fertility, mortality, and migration. Policymakers can then better assess the impacts of possible changes in demographic behavior.

Demographic Assumptions: Two postulates of fertility behaviour are used. One is that the present total fertility rate of 1.91 continues for the next 50 years—in other words, that the age-specific fertility rates in 1980 remain unchanged. The second assumes a 10 percent decline in fertility at all ages in 1990, so that the TFR would fall to 1.72, with the age-specific rates that would then prevail remaining constant thereafter.

Only one set of mortality assumptions is used—that the current life expectancy of 72 for women and 68 for men increases to 75 and 72, respectively, in 2000, and to 77 and 74 by 2020.

Three sets of migration patterns are used. One assumes the 1970–80 levels, under which annual net emigration is 1,800. In the second, levels of net emigration are immediately (that is, in 1980) halved, so that the net outflow of population is 900. (The proportional age-sex distribution is the same in both sets.) The third set assumes a net migration of zero.

Based on various combinations of these assumptions about fertility and migration, a number of scenarios of population growth in Barbados have been prepared (see Figure 2; for supporting data, see Appendix Table C):

Scenario A – current fertility (1.91) and current net emigration (1,800 per year)

Scenario B – declining fertility (1.72) and declining net emigration (900 per year)

Scenario C – current fertility (1.91) and declining net emigration (900 per year)

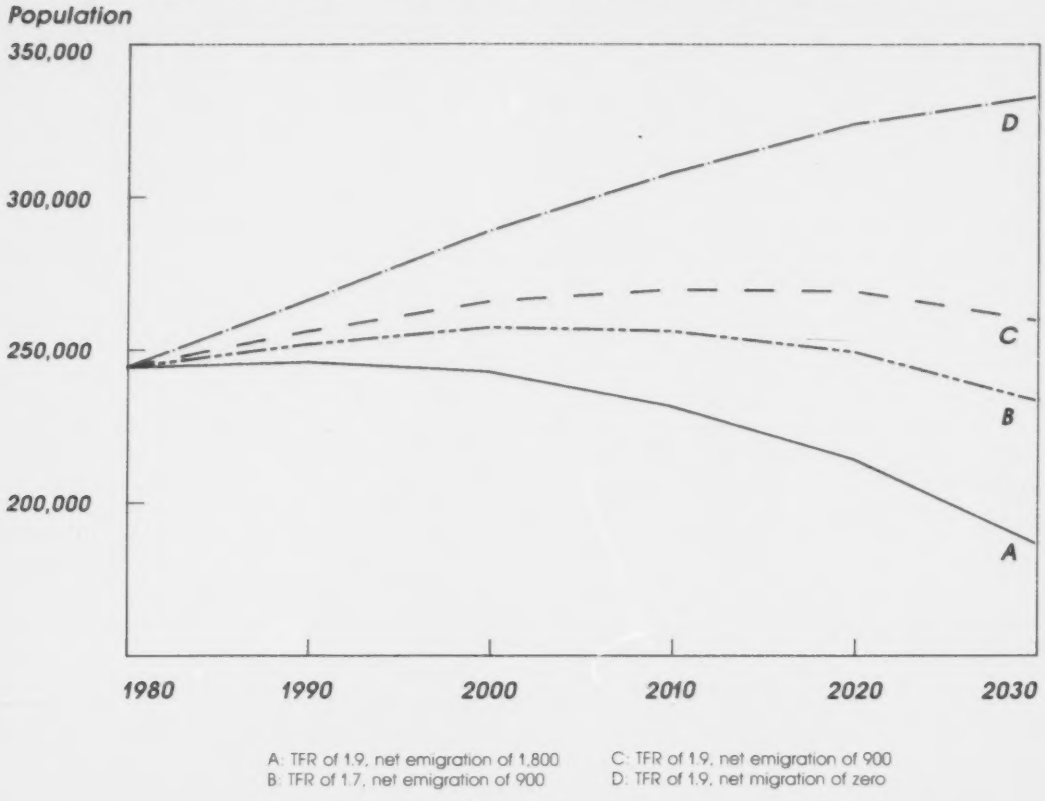
Scenario D – current fertility (1.91) and net migraiton of zero.

The implications of these scenarios are discussed in some detail in the remainder of this report. These are, of course, but four of the many possible combinations of fertility and migration levels (see Appendix Table D for population projections under three other combinations), but they represent the most likely patterns of future population growth in Barbados at this time.

Population Projections: The continuation of current fertility rates, which are quite low, and net emigration (Scenario A) would mean no further population growth in Barbados and that numbers would begin to decline shortly before the turn of the century. Indeed, if fertility and migration rates remained at approximately their 1980 levels for the next 50 years, the 2030 population of Barbados would be about 187,000, some 57,000 less than it was in 1980. The crude birth rate would be 8.8 per 1,000, while the crude death rate would be 15.5.

Although Scenario A is an encouraging one, is it realistic to assume that the fertility rate in Barbados will remain at such a low level? More importantly, perhaps, is it realistic to think that net emigration can remain at its present high level for the foreseeable future? What would occur if net emigration were cut in half, to 900 per year, or if it were eliminated entirely? Both are reasonable possibilities. The United States and Canada are considering revisions in their immigration policies that could mean substantial reductions in the number of people allowed to enter from the Caribbean and elsewhere, as hap-

Figure 2: Population of Barbados, 1980–2030



A: TFR of 1.9, net emigration of 1,800
B: TFR of 1.7, net emigration of 900
C: TFR of 1.9, net emigration of 900
D: TFR of 1.9, net migration of zero

pened when the United Kingdom imposed restrictions in the 1960s.

In addition, there is evidence of increasing immigration into Barbados from neighbouring as well as the metropolitan countries—the latter consisting predominantly of returning Barbadians. Thus, both Scenario C (present fertilty and average annual net emigration of 900) and Scenario D (present fertility and net migration of zero) should be seriously considered as possible future population paths of Barbados.

Under Scenario C, the population would continue to grow until 2015, when it would peak at 270,000 before falling slightly thereafter to 260,00 in 2030—some 10 percent above its current level. Such growth may well be acceptable but it is probably the highest desirable in a nation that already has the highest density in the Western Hemisphere.

Scenario D is particularly illustrative of the built-in momentum for growth that is present in a relatively "young" population, such as Barbados has today. Without any net emigration (that is to say, if the number entering the country equals the number leaving), and despite the fact that fertility would be below the level needed to replace the population, Barbados would grow from 244,000 in 1980 to 290,000 at the turn of the century and then to 333,000 in just 50 years.

Even if fertility were to drop to 1.7, the combination of the momentum of population growth and the elimination of a net loss of people through migration would yield 280,000 Barbadians in the year 2000 and 302,000 in 2020 before growth stopped. (For details of this projection see Appendix Table D, Scenario E.)

Such growth may seem perplexing to the casual observer. After all, women are

only averaging 1.9 live births. But the high fertility of the late 1960s and early 1970s and the curtailment of emigration of young adults under Scenario D would mean that more women would be "available" to have that average number of 1.9 children for the next few decades. Indeed the *number* of births under this scenario would increase from 4,200 in 1980 to 4,700 in 1995 before falling gradually back to 4,000 around 2025.

Net migration is the critical variable that must be monitored very closely if Barbadians are concerned about population growth. Any net loss through migration below 900 people per year would result in substantial growth in the near future. Is a population of 275,000, for example, acceptable in the year 2000? Such numbers are very plausible, even with low fertility, given reduced emigration. If this is considered too large, the only solution—if a reduction in net emigration does occur—is to continue to reduce fertility.

Scenario B meets the concerns about problems associated with a growing population quite adequately. If the total fertility rate were cut by 10 percent (to 1.72) by 1990 and remained at that level thereafter and if annual net emigration averaged 900, the population would peak at 258,000 in 2025 before beginning a slow decline to 233,000 by 2030. At first glance, reducing fertility even more than at present may seem too ambitious. Yet all it would require to attain a TFR of 1.72 would be a 20 percent reduction in adolescent fertility and in that of women in their early twenties. Improvements in the delivery of contraceptives and in sex education programs could go a long way towards attaining this goal.

What if present concerns about reduced emigration are unfounded and the net loss continues at current levels in the future? What would be the impact of lower fertility under these circumstances? The size of the population would fall to 235,000 by the turn of the century and to 164,000 by 2030 (see Appendix Table D, Scenario F). If Barbados could be assured of continued acceptance of some 2,000 immigrants every year by the metropolitan countries, then further fertility declines might not be necessary.

However, fertility levels would still need to be monitored closely. A slight increase in fertility would have significant impact on the future size of the population. Projections of the population with continued high net emigration but with fertility of 2.4 illustrate the tremendous impact of a change in the average number of children per woman (see Appendix Table D, Scenario G). Having half a child more on average would result in 264,000 Barbadians in the year 2000, with slight increases over the following 20 years—despite the continued large net emigration of some 18,000 people per decade.

As far as population size is concerned, Barbados is in a relatively fortunate position compared with other East Caribbean nations. Nevertheless, only small numerical increases can be tolerated. If net emigration is drastically curtailed or if fertility increases well above replacement, substantial growth could occur. Reductions in net emigration seem quite probable and slight increases in fertility could indeed take place. Thus, while the picture appears positive, relaxation of concern could prove troublesome. Only if both migration and fertility are kept within reasonable bounds can Barbados reduce its growth to a minimum, if not zero, before the turn of the century.

As indicated earlier, it is not only population size that is affected by changes in demographic behaviour; equally important is the impact of such changes, particularly in fertility and migration, on the age distribution of the population. Indeed, changes as far back as the 1950s and 1960s will affect the nation for the next 50 years.

Continued low fertility—whether 1.9 or 1.7—guarantees an aging population (see Table 2). No matter which of the scenarios described above actually occurs, the proportion of the population 65 or older (the elderly) will increase in the future while that under age 15 will decrease. Variations in the active population (those between 15 and 64) will not be as dra-

Table 2: Percent Distribution of Population by Age-Group in Barbados, 1980–2030

Scenario	1980	1990	2000	2010	2020	2030
Scenario A						
Under 15	30	24	22	18	16	14
15–64	60	65	67	70	66	57
65 or older	10	11	11	12	18	29
Scenario B						
Under 15	30	23	21	18	15	14
15–64	60	67	69	72	69	61
65 or older	10	10	10	10	16	25
Scenario C						
Under 15	30	24	23	20	17	16
15–64	60	66	67	70	68	61
65 or older	10	10	10	10	15	23
Scenario D						
Under 15	30	24	23	21	19	18
15–64	60	66	68	70	68	64
65 or older	10	10	9	9	13	18

matic. Generally, there will be a reversal in the proportions of the young and the old. For example, in Scenario A (a continuation of current emigration and fertility), the proportion under 15 and over 64 will shift from 24 percent and 11 percent, respectively, in 1990 to 14 percent and 29 percent in 2030. A somewhat similar pattern is noted under all scenarios.

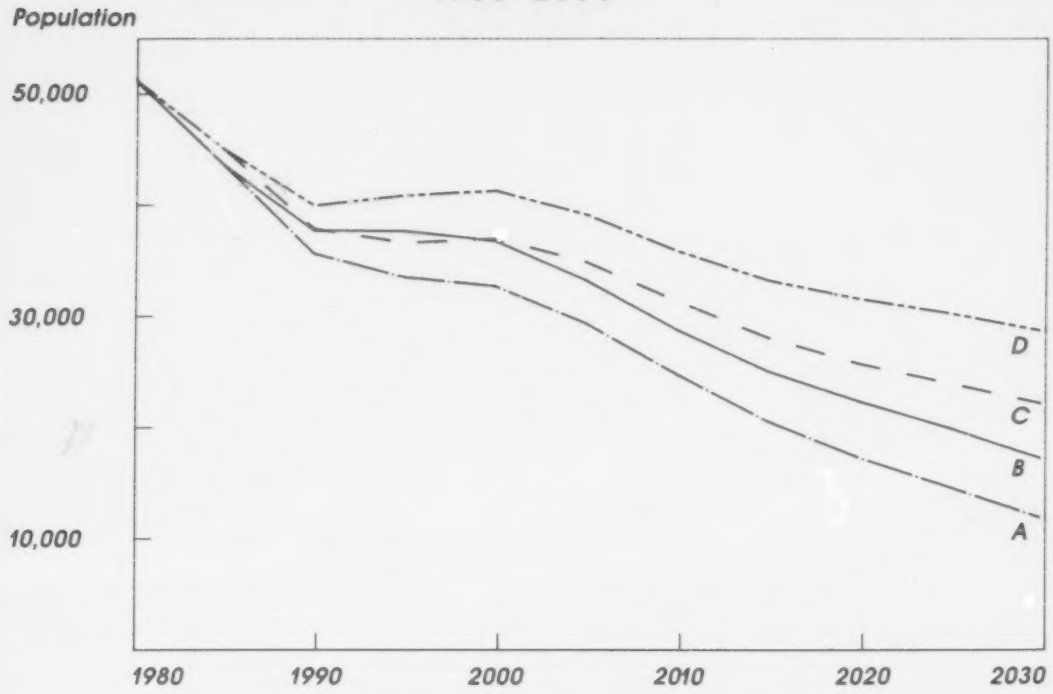
Taken together, past, present, and future fertility and migration behaviour are going to cause substantial changes in the age distribution of the nation over the next 50 years—changes that will affect the size of school enrollments, the labour force, and the elderly population.

School Enrollment: In 1980, the number of children aged 5–14 was about 51,000. Under Scenario A, that number would fall to 37,000 by the turn of the century and to 17,000 by 2030—a remarkable decline in just 50 years. With emigration cut in half (Scenario C), school enrollment would still fall, though not as much—to 41,000 in 2000 and 29,000 in 2030. Lower fertility (Scenario B) results in even smaller numbers of school-age children in the population. (See Figure 3; for supporting data, see Appendix Table E.)

If all emigration is halted, however, the number of children in school in future years, while smaller than today, would be much greater than under the other scenarios. Even in 2030, over 40,000 Barbadians would be between 5 and 14—more than double the number there would be if migration remains at current levels. The impact of emigration on school enrollments is enormous. In all instances, a decline in the number of children in school can be expected primarily because of continued low fertility in the future, but variations in migration will affect that number considerably.

Labour Force: The future employment demands of a growing labour force are not a cause of optimism. Based on labour force participation rates developed for Barbados by the International Labour Office, the total number of people working or looking for a job was estimated at about 103,000 in 1980. Under all four scenarios developed for this report a significant number of new jobs will have to be created in this and the next decade simply to maintain current employment levels. (See Figure 4; for supporting data, see Appendix Table F.)

Figure 3: School-Age Population (5–14) in Barbados, 1980–2030



A: TFR of 1.9, net emigration of 1,800
B: TFR of 1.7, net emigration of 900
C: TFR of 1.9, net emigration of 900
D: TFR of 1.9, net migration of zero

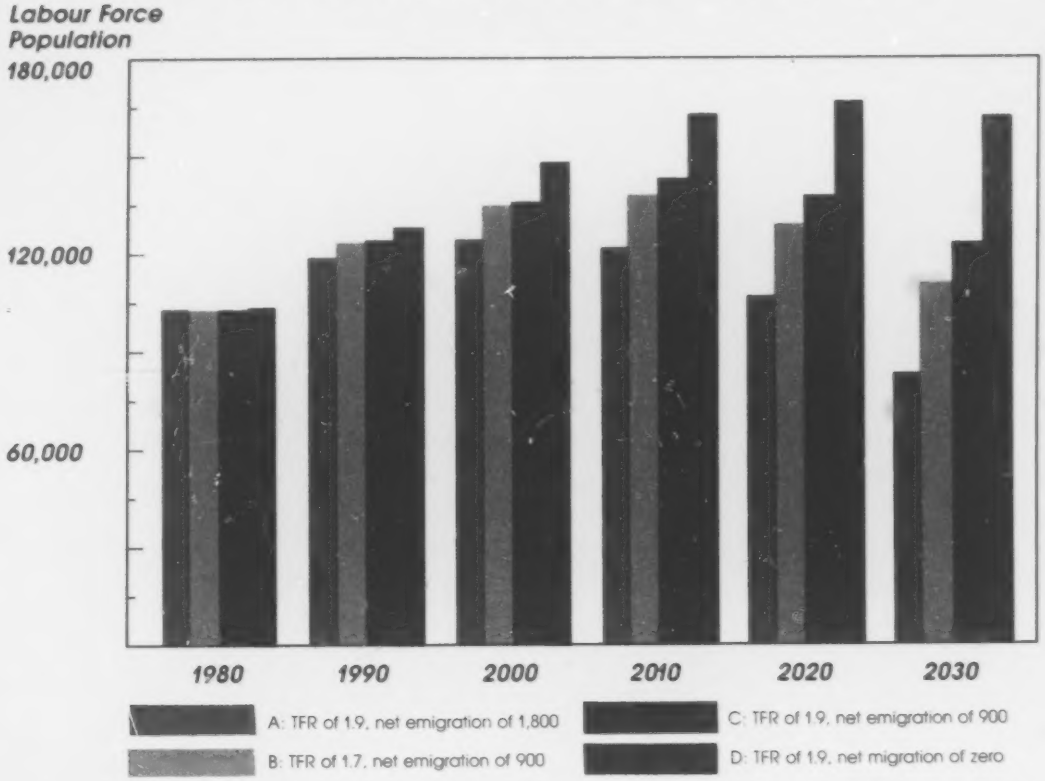
Under Scenario A, for example, some 15,000 jobs would have to be created between now and 1990 and an additional 5,000 jobs between 1990 and 2000. If emigration is cut in half, 20,000 new jobs would be needed in this decade and 12,500 in the next. Even with lower fertility, a similar number of jobs would be needed between now and the turn of the century. Without any migration, demand for jobs would soar—45,000 new ones would be needed by 2000. If unemployment remains at the currently reported level of 14.7 percent, the number of people looking for work could grow from about 15,000 today to perhaps 18,000 in 1990 and 20,000 in 2000.

These changes over time reflect both the higher fertility of the 1960s and early 1970s and the more recent and projected very low fertility. The cohorts born between 1960 and 1975 were relatively large and will remain large as they pass thorugh their active years—that stage of life when employment is sought. On the other hand, a low fertility in the 1980s and 1990s would yield a much smaller labour force in the 21st century.

It is important to bear in mind that for the next 20 years at least these projections are quite reliable. The people who need jobs are already born; only changes in migration can substantially affect how many of them try to enter the labour force over the next few years.

The Elderly: Rarely are gerontological problems associated with developing countries. The number of elderly (here defined as 65 or older) is simply not a major concern when fertility rates are high and life expectancy, while increasing, is still relatively low. That is not the situation, however, in Barbados. Indeed, the country closely resembles the United States insofar as its future problems of an aging popula-

Figure 4: Labour Force in Barbados, 1980–2030



tion are concerned. (See Figure 5; for supporting data, see Appendix Table G.)

Because of high fertility in the 1950s and 1960s, the *number* of elderly Barbadians will increase dramatically around 2015; given recent and projected future very low fertility, the *proportion* of elderly in the population could grow even more dramatically in the 21st century, as noted earlier.

Looking first at the proportional contribution of the elderly to the Barbados population, in 1980 some 10.5 percent were 65 and older. That proportion will not vary much until 2015 no matter which demographic scenario occurs. Only then, 32 years from now, would the elderly represent 15 percent of the population. By 2030, the proportion could range from 18 percent (under Scenario D) to 29 percent (under Scenario A). It can be safely assumed that within 50 years close to one out of four Barbadians will be at least 65 years old, in marked contrast to the figure of one in ten today.

Numerical increases in the elderly population will be equally dramatic. There would continue to be around 26,000 people 65 or older under all scenarios through the year 2010. But by 2015 there would be about 32,000, and between 55,000 and 61,000 by the year 2030. In less than 50 years, the elderly population of Barbados could more than double.

The gerontological issues that will emerge over 30 years typify the impact of long-run demographic changes. The fertiltiy of one generation affects the population composition many years later. Statisticians and demographers who are aware of these predictable changes should inform policymakers in ample time to modify future legislation related to these issues.